UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/539,343	03/31/2000	Dean P. Macri	10559/154001/P7988	1434

20985 7590 05/21/2003

FISH & RICHARDSON, PC
4350 LA JOLLA VILLAGE DRIVE
SUITE 500
SAN DIEGO, CA 92122

EXAMINER	
GOOD JOHNSON, MOTILEWA	
ART UNIT	PAPER NUMBER
2672	14

DATE MAILED: 05/21/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	09/539,343	MACRI ET AL.
	Examiner	Art Unit
	Motilewa A. Good-Johnson	2672

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *08 May 2003* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-30* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-30* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

1. This office action is responsive to the following communications: Application, filed on 03/31/2000; Preliminary Amendment A, filed on 10/18/2000; Amendment B, filed 10/29/2002; Supplemental Amendment C, filed 12/02/2002; Amendment D, filed 04/07/2003.

2. Claims 1-30 are pending in this application. Claims 1, 9, 11, 18, 20, 27 and 29 are independent claims. Claims 1, 6, 9, 11, 16, 18, 20, 23, 27 and 29 have been amended.

3. The present title of the application is "Trimming Surfaces" (as originally filed).

Continued Examination Under 37 CFR 1.114

4. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 05/05/203 has been entered.

Specification

5. The abstract of the disclosure is objected to because the abstract should be titled abstract and not the title of the invention. Correction is required. See MPEP § 608.01(b).

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

7. Claims 1-30 are rejected under 35 U.S.C. 102(a) as being anticipated by Pederson, *A Framework for Interactive Texturing on Curved Surfaces,* ACM, 1996, pages 295-302.

As per independent claim 1, a method of trimming a parametric surface, comprising: producing a trimming texture by applying a trimming curve to a mesh; and applying the trimming texture to the parametric surface, the trimming texture being applied by texture mapping the trimming texture onto the parametric surface. Pedersen discloses surfaces represented by a parameterized polygonal mesh, page 296, col. 1, computing a curve between two points on the surface and obtaining the texture coordinates from the points on the surface, page 296, col. 2. Pedersen further discloses texture compositing using the texture patches on the surface, page 297, col. 1, see also figures on page 302.

With respect to dependent claim 2, rendering an image based on the parametric surface and the trimming texture. Pedersen discloses digital compositing to apply

patches on curves surfaces and texture mapping allowing the textures to be rendered, page 300, col. 2.

With respect to dependent claim 3, drawing a plurality of pixels only in a solid portion of the image that is not a trimmed portion. Pedersen discloses on page 302, patches of a mesh used to texture surfaces and using the patches only in solid areas.

With respect to dependent claim 4, a first portion comprising a rendered section of the parametric surface; and a second portion comprising a trimmed section of the parametric surface. Pedersen discloses on page 302, and further discloses textures can be copied and pasted between any patch and the surface and the texture can be rendered at interactive rates, page 300, col. 2.

With respect to dependent claim 5, drawing a plurality of pixels based on an allocation of the trimming texture relative to the parametric surface. Pedersen discloses on page 302, patches of a mesh used to texture surfaces and using the patches only in solid areas.

With respect to dependent claim 6, producing is performed in a pre-rendering process and applying is performed in a run-time process. Pedersen discloses texturing algorithm implemented for any class for surfaces for the library, page 296, col. 2, and further discloses rendering at interactive rates, page 300, col. 2.

With respect to dependent claim 7, obtaining a material texture; drawing the material texture on the parametric surface based on the trimming texture. Pedersen discloses textures can copy and pasted between any patch and the surface, thus allowing for material textures as well, page 300, col. 2.

With respect to dependent claim 8, obtaining the trimming texture from a plurality of trimming curves for the parametric surface. Pedersen discloses the region to be extracted is outlined by one or more polygonal curves on the surface, page 297, col. 1.

As per independent claim 9, it is rejected based upon similar rational as above dependent claim 2.

With respect to dependent claim 10, it is rejected based upon similar rational as above dependent claim 7.

As per independent claim 11, "an article comprising a computer-readable medium . . .", it is rejected based upon similar rational as above independent claim 1.

Pedersen discloses algorithms for texture operations, page 297, col. 1, thus making it inherent that the algorithms would be performed on a computer-readable medium.

With respect to dependent claims 12-17 they are rejected based upon similar rational as above dependent claims 2-5, 7 and 8 respectively.

As per independent claim 18, "an article comprising a computer-readable medium . . .", it is rejected based upon similar rational as above independent claim 9. Pedersen discloses algorithms for texture operations, page 297, col. 1, thus making it inherent that the algorithms would be performed on a computer-readable medium.

With respect to dependent claim 19, it is rejected based upon similar rational as above dependent claim 10.

As per independent claim 20, "an apparatus for use in trimming . . .", it is rejected based upon similar rational as above independent claim 1, Pedersen also discloses interactive and automatic tools, page 297, col. 1.

With respect to dependent claims 21-26 they are rejected based upon similar rational as above dependent claims 2-5, 7 and 8 respectively.

As per independent claim 27, "an apparatus . . .", it is rejected based upon similar rational as above independent claim 9, Pedersen also discloses interactive and automatic tools, page 297, col. 1.

With respect to dependent claim 28, it is rejected based upon similar rational as above dependent claim 10.

As per independent claim 29 and dependent claim 30, they are rejected based upon similar rational as above independent claim 1 and dependent claim 5.

Response to Arguments

8. Applicant's arguments with respect to claims 1-30 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Coelho et al., *An algorithm for intersecting and trimming parametric meshes*, ACM, SIGGRAPH, 1998, pages 1-8.

Kumar et al., *Interactive Display of Large-Scale NURBS Models*, Symposium on Interactive 3D Graphics, ACM, 1995, pages 51-58, 206.

Rockwood et al., *Real-Time Rendering of Trimmed Surfaces*, ACM, 1989, pages 107-116.

6,292,192 B1 Moreton 345/586 09/18/2001 01/09/1998

System and method for the direct rendering of curve bounded objects.

5,966,133 Hoppe 345/420 10/12/1999

Geomorphs and variable resolution control of progressive meshes.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Motilewa A. Good-Johnson whose telephone number is (703) 305-3939. The examiner can normally be reached on Monday - Friday 8:30 AM - 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mike Razavi can be reached on (703) 305-4713. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9314 for regular communications and (703) 872-9314 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 306-0377.

Motilewa A. Good-Johnson
Examiner
Art Unit 2672

mgj
May 19, 2003